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Infertility and Impaired Fecundity in the United States, 1982–2010: Data From the National Survey of Family Growth

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Abstract

Objectives—This report presents nationally representative estimates and trends for infertility and impaired fecundity—two measures of fertility problems—among women aged 15–44 in the United States. Data are also presented on a measure of infertility among men aged 15–44.

Methods—Data for this report come primarily from the 2006–2010 National Survey of Family Growth (NSFG), which consisted of 22,682 interviews with men and women aged 15–44, conducted from June 2006 through June 2010. The response rate for women in the 2006–2010 NSFG was 78%, and for men was 75%. Selected trends are shown based on prior NSFG years.

Results—The percentage of married women aged 15–44 who were infertile fell from 8.5% in 1982 (2.4 million women) to 6.0% (1.5 million) in 2006–2010. Impaired fecundity among married women aged 15–44 increased from 11% in 1982 to 15% in 2002, but decreased to 12% in 2006–2010. Among all women, 11% had impaired fecundity in 2006–2010. Both infertility and impaired fecundity remain closely associated with age for nulliparous women. Among married, nulliparous women aged 35–44, the percentage infertile declined from 44% in 1982 to 27% in 2006–2010, reflecting greater delays in childbearing over this period. Among married women in 2006–2010, non-Hispanic black women were more likely to be infertile than non-Hispanic white women. Some form of infertility (either subfertility or nonsurgical sterility) was reported by 9.4% of men aged 15–44 and 12% of men aged 25–44 in 2006–2010, similar to levels seen in 2002.

Keywords: current fertility problems • nonsurgical sterility • male fertility problems • demographic trends

Introduction

As part of its overall mission to collect data on fertility and the intermediate factors that explain birth rates in the United States, the National Survey of Family Growth (NSFG) has provided two population-based, nationally representative measures for fertility problems: infertility (since 1973) and impaired fecundity (since 1982) (1–4). Infertility is defined as a lack of pregnancy in the 12 months prior to survey, despite having had unprotected sexual intercourse in each of those months with the same husband or partner. Impaired fecundity is defined as physical difficulty in either getting pregnant or carrying a pregnancy to live birth. NSFG data are used to monitor the prevalence and correlates of infertility and to evaluate the use, efficacy, and safety of infertility services and treatments. The survey is also used in research on the causes of infertility and provides information to guide programs for the primary and secondary prevention of infertility among women and men (4,5).

This report presents trends and national estimates for both NSFG-based measures of fertility problems among women, and one measure of infertility among men, in the United States, using the most recently available data from the 2006–2010 NSFG. By using a standardized approach to monitoring the prevalence of impaired fecundity among all women aged 15–44 since 1982, and 12-month infertility among married women since 1973, NSFG provides demographic ''snapshots'' of the impact of societal trends such as delayed marriage and childbearing, and tracks

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the potential demand for infertility-related medical services.

Data from the 2002 NSFG showed that an estimated 12% of women (7.3 million) in the United States had impaired fecundity or difficulties conceiving or bringing a pregnancy to term (1). This represented a significant increase from both the percentage (8.4%) and number (4.5 million) seen in 1982 (2,6). In 2002, 7.4% of married women aged 15–44 (2.1 million) were infertile for at least 12 consecutive months, a slight decrease from 8.5% seen in 1982 (1). The reasons for these disparate trends in infertility and impaired fecundity are not completely understood, but both measures are likely affected by the upward shifts in age at first marriage and age at first birth among women (1,2,7–12), as well as trends in surgical sterilization (13–15). In addition, the past two decades have seen an increasing range and availability of medical treatment options for infertility (4). Amidst these societal trends, it is widely recognized that estimates of infertility will vary, sometimes significantly, based on the definitions and study methodology used, particularly with regard to defining the ''at-risk'' population (16–21).

Despite uncertainty as to how many individuals are affected by infertility in the United States, considerable research has focused on several known or potential causes of infertility or impaired fecundity, apart from the well-documented decline in natural fecundity with female age (22–25). These include sexually transmitted infections such as chlamydia, pelvic inflammatory disease, environmental toxins, and certain lifestyle factors closely associated with fertility problems, such as smoking and obesity (4,26). In addition, there are known disparities in the diagnosis and treatment of infertility by socioeconomic and demographic factors that may raise questions about differential access to infertility services and potentially unmet need for these services (27–31). In this context, NSFG data are useful for measuring and monitoring infertility and fecundity status consistently over time.

This report focuses on the most recent trends in infertility and impaired fecundity through 2010. Topics include:

- Trends in the overall numbers and percentages of women, by fecundity and infertility status (the table and Figures 1 and 2 in the main text, plus Table 1 on p. 13).
- Fecundity and infertility status, by selected sociodemographic characteristics such as age, parity, and education (Tables 2–4 and Figures 3–6).
- Multivariate analysis for infertility and impaired fecundity (Table 5).
- Infertility status among men aged 15–44 (Table 6).

A companion report on the use of infertility services is forthcoming.

Methods

Data source

NCHS has conducted NSFG seven times: in 1973 and 1976 with samples of married and formerly married women; in 1982, 1988, and 1995 with samples of women of all marital status categories; and in 2002 and 2006–2010 with national samples of both women and men aged 15–44. Each time, the interviews were conducted in person by trained female interviewers in the selected persons' homes.

The current report is based primarily on interviews conducted with women from June 2006 through June 2010. The 2006–2010 NSFG was based on 22,682 face-to-face interviews—12,279 with women and 10,403 with men, aged 15–44, in the household population of the United States. The 2006–2010 sample is a nationally representative multistage area probability sample. The response rate for the 2006–2010 NSFG was 77% overall: 78% for women and 75% for men. Further details on the methods and procedures of NSFG have been published previously (32–34).

Infertility and impaired fecundity measures

To present population-based trends over time for fertility problems, this report uses two measures that have been consistently defined for women since the 1982 NSFG: infertility status and fecundity status.

Infertility status among women

Infertility status, as coded in the INFERT variable, reflects a measure typically used by physicians and others to identify couples who may warrant medical evaluation to see whether fertility treatment services could help them have a baby. The INFERT variable is constructed based on answers to detailed questions on contraceptive use, sexual activity, and marital or cohabiting status. When neither the respondent nor her current husband or cohabiting partner is surgically sterile, a woman is defined as infertile at time of interview if, during the previous 12 months or longer, she and her husband or partner were continuously married or cohabiting, were sexually active each month, had not used contraception, and had not become pregnant.

This measure has traditionally been limited to married or cohabiting women because infertility is a couple-based phenomenon; unless he or she is completely sterile, either partner may potentially achieve pregnancy with a different partner. This measure does not attempt to distinguish whether the infertility stems from the female or male partner. Also, the measure requires at least 12 months of sexual relationship with the same partner and reliable reporting of contraception and pregnancy, and married or cohabiting women's reporting of these experiences is less prone to misreporting.

Infertility status, as shown in Tables 1 and 4, has three categories: surgically sterile, infertile, and presumed fertile. The ''presumed fertile'' category is a residual category indicating that the married or cohabiting woman is neither surgically sterile nor infertile at the time of interview.

Fecundity status among women

Fecundity status, as coded in the FECUND variable, describes the physical ability of a woman to have a child and not simply to conceive a pregnancy. This measure is defined for all women, regardless of their relationship status. As with the infertility measure, married or cohabiting women are classified as surgically sterile on FECUND if their husbands or cohabiting partners are surgically sterile. In addition, married or cohabiting women are asked separate questions about fertility problems encountered by each member of the couple, whereas single, noncohabiting women can report only about their own impaired fecundity. For the purposes of the fecundity status measure, this means that a married or cohabiting woman could be classified as surgically sterile or as having impaired fecundity solely on the basis of her husband's or cohabiting partner's status.

As shown in this report, fecundity status has three main categories: surgically sterile, having impaired fecundity, and presumed fecund. As with the INFERT variable, the FECUND variable is constructed based on responses to NSFG survey questions, not by a medical examination. Also, the ''presumed fecund'' category is a residual category indicating that the woman does not meet the conditions of surgical sterility or impaired fecundity.

Women were classified as *surgically sterile* if they (or their current husband or cohabiting partner) had an unreversed sterilizing operation, for example, a tubal sterilization, hysterectomy, or vasectomy. The category is further divided into contraceptive and noncontraceptive subcategories, based on the reasons reported for the sterilizing operation.

Impaired fecundity includes women in the following three subgroups: nonsurgically sterile, subfecund, and long interval without conception.

Nonsurgically sterile—Women who have not reported any sterilization operations for themselves or their current husband or cohabiting partner are asked the following questions, and are defined as nonsurgically sterile if they answer ''no'' to either question:

- *Some women are not physically able to have children. As far as you know, is it physically possible for you, yourself, to have (a/another) baby?*
- If the woman is married or cohabiting: *What about [HUSBAND/PARTNER]? As far as you know, is it physically possible for him to father a baby in the future?*

Subfecund—Women not already responding as surgically or nonsurgically sterile are asked the following questions about physical difficulties having a baby, and a ''yes'' answer on any question is considered subfecundity:

- *Some women are physically able to have (a/another) baby, but have difficulty getting pregnant or carrying the baby to term. As far as you know, would you, yourself, have any difficulty getting pregnant (again) or carrying (a/another) baby (after this pregnancy)?*
- If the woman is married or cohabiting: *As far as you know, does [HUSBAND/PARTNER] have any difficulty fathering a baby?*
- *At any time has a medical doctor ever advised you never to become pregnant (again)?*

Long interval without conception (or 36-month infertility)—Women not already classified as surgically sterile, nonsurgically sterile, or subfecund could be defined as having a ''long interval without conception'' if they had been continuously married or cohabiting, were sexually active in each month, had not used contraception, and had not had a pregnancy for 36 consecutive months or longer.

Presumed fecund is a residual category (as was ''presumed fertile'' with infertility status) and means that the woman—or couple, if married or cohabiting—was not surgically sterile and did not have impaired fecundity. The percentage of currently married women with impaired fecundity is higher than the percentage of married women with 12-month infertility because impaired fecundity includes problems carrying pregnancies to live birth in addition to problems conceiving, whereas infertility includes only problems conceiving. However, 12-month infertility is not strictly a subset of impaired fecundity for married women or cohabiting women, as explained below.

Relationship between infertility and impaired fecundity

Despite the broader definition of impaired fecundity that includes problems carrying pregnancies to live birth, not all married or cohabiting women with 12-month infertility will necessarily have impaired fecundity. The main reason for this is that impaired fecundity includes a component of 36-month infertility, rather than 12-month infertility. Some married or cohabiting women who have not been infertile as long as 36 months may be categorized as presumed fecund on the impaired fecundity measure, based on their answers to the questions about nonsurgical sterility and subfecundity. Because of this potential but incomplete overlap of the two measures of fertility problems for married or cohabiting women, some analyses of infertility services focus on women with ''current fertility problems,'' defined as having either infertility or impaired fecundity (Table 5). For example, among the 3.53 million married women aged 15–44 with current fertility problems in 2006–2010, 31% had both impaired fecundity and 12-month infertility, 57% had only impaired fecundity, and 12% had only 12-month infertility. A similar extent of overlap in these measures was seen among married women aged 15–44 with current fertility problems in 1995 and 2002.

Infertility status among men

Although a completely analogous measure of infertility cannot be constructed for men as for women, NSFG does include data from which to construct a fairly comparable measure (Table 6). Infertility status among men is based on directly asked questions about surgical sterility and men's physical ability to father a child. Men are coded into four categories based on responses they give for themselves or their current wives or cohabiting partners:

Surgically sterile—If they reported an unreversed vasectomy or some other reason for surgical sterility, or they reported that their wives or cohabiting partners are surgically sterile

Nonsurgically sterile—If they responded ''no'' to the following question that parallels the question women are asked about nonsurgical sterility:

Some men are not physically able to father children. As far as you know, is it physically possible for you, yourself to biologically father a child in the future?

Men are also coded in this category if their current wives or cohabiting partners are nonsurgically sterile.

Subfertile—If they respond ''yes'' to the following question about their subfertility, paralleling the question women are asked about subfecundity:

Some men are physically able to father a child, but would have difficulty doing so. As far as you know, would you have any difficulty fathering a child?

Presumed fertile—A residual category indicating that he (or his current wife or cohabiting partner) did not meet the definitions for the other categories.

Demographic and behavioral variables

The data on infertility and impaired fecundity presented in this report are shown with respect to several key social or demographic characteristics, including age, parity (or number of biological children fathered by men), marital or cohabiting status, educational attainment, percent of poverty level of household, and Hispanic origin and race. These characteristics have been chosen because prior studies have documented their association either with fertility problems or with timing of attempts to have a child. For example, prior literature (22–25) has demonstrated the marked decline in women's physical ability to have a child (fecundity) with increasing age, particularly among those trying to have their first child. Factors such as educational attainment have been correlated with fertility impairments, but by way of their association with older ages when women first try to have a child (10).

All characteristics reflect the respondent's status at the time of interview. Parity—the number of live births a woman has had—is dichotomized as 0, or 1 or more. Similarly for men, their number of biological children is shown as 0, or 1 or more. Primary infertility or primary impaired fecundity is defined as physical difficulties having a first child, and childless (nulliparous) women who are infertile would be said to have primary infertility. Secondary infertility or impaired fecundity would be defined among those who have had at least one child at the time of interview and are experiencing physical difficulties having another child.

The measure of marital or cohabiting status used in this report is based only on relationships with opposite-sex spouses or partners, in keeping with the marital or cohabiting status variables that have been defined across all NSFG surveys to date. The measure of education used here is generally limited to those aged 25–44, to enable showing a top category of Master's degree or higher; younger respondents may still be attending school to earn these degrees. Where sample sizes did not permit this level of detail (Table 5 and Figure 3), the top category used was Bachelor's degree or higher, and results were based on the larger group of women aged 22–44. Percent of poverty level is based on a comparison of each respondent's household income with the poverty thresholds for a family of this size, as defined by the U.S. Census Bureau; adjustments are not made for variations in cost of living in the place where the respondent resides. This measure is shown only for respondents aged 20–44, to exclude potentially misreported or incompletely reported household incomes for teenagers. The definitions of Hispanic origin and race used in this report comply with the 1997 guidelines from the Office of Management and Budget (35), taking into account multiple-race reporting. In selected tables where sample sizes permit, Asian persons are shown separately.

The 2006–2010 NSFG and earlier NSFG surveys offer several strengths for studying infertility and impaired fecundity in the U.S. household population. In addition to rigorous quality control measures and good response rates (32–34), NSFG includes detailed data on sexual activity, contraception, pregnancy, marriage, and cohabitation, such that reliable and consistent measures of fertility problems can be defined over time. Although the NSFG age range of 15–44 excludes measurement of fertility problems among older women who may still be pursuing childbearing, using nationally representative survey data—rather than non-probability-based samples of women or couples ''trying to conceive'' or those seeking medical help for infertility—allows NSFG to derive a more generalizable estimate of the prevalence of fertility problems in the U.S. household population in this age group.

Although NSFG collects information on fertility intentions and desires, its two measures of fertility problems are not contingent on these factors. This is both a strength and a limitation for understanding the population-based estimates. On the one hand, NSFG measures may provide a more accurate snapshot of the fecundity and infertility status of the general reproductive-age population, independent of any sociodemographic selectivity or temporal trends associated with who ''seeks pregnancy'' and when they do so in their life course. On the other hand, these measures can be misconstrued as direct indicators of the need (or unmet need) for infertility services (36). Some data users may not recognize that an individual or couple can remain infertile or fulfill the definition of impaired fecundity for years after they have stopped trying to have a child. In sum, NSFG measures for women can be used in conjunction with fertility intentions and desires to provide population-based estimates of potential demand for infertility services and to assess the extent to which this demand is met.

For men, first included in NSFG in 2002, the time trend for providing nationally representative estimates is shorter than for women. Also, given that a significant association with age and male infertility is not generally seen until ages beyond the NSFG upper bound of 44, it is unlikely that the NSFG-based estimates of male infertility will show the same prevalence or differentials seen among women. However, these data can still provide a useful estimate of infertility for the general population from the male perspective.

Statistical analysis

All estimates in this report are based on sampling weights designed to produce unbiased estimates of men and women aged 15–44 in the United States. The statistical package SAS, version 9.3 (http://www.sas.com), was used to produce all estimates of percentages and numbers in this report. SAS SURVEYFREQ procedures were used to estimate the sampling errors of the statistics because these procedures take into account the use of weighted data and the complex design of the sample in calculating estimates of standard errors and in performing significance tests. Each table in this report (with the exception of Table 5, which shows logistic regression results for women) includes standard errors as a measure of the precision of each point estimate (percentage) presented.

The significance of differences among subgroups was determined by standard two-tailed *t* tests using point estimates and their standard errors. For selected comparisons, Wald chi-square tests of overall association were also performed within SAS PROC SURVEYFREQ, and symbols denoting these test results are included in selected tables. No adjustments were made for multiple comparisons. Terms such as ''greater than'' and ''less than'' indicate that a statistically significant difference was found. Terms such as ''similar'' or ''no difference'' indicate that the statistics being compared were not significantly different. Lack of comment regarding any difference does not mean that significance was tested and ruled out.

In the description of the results below, when the percentage being cited is below 10%, the text will cite the exact percentage to one decimal point. To make reading easier and to remind the reader that the results are based on samples and subject to sampling error, percentages above 10% will generally be shown rounded to the nearest whole percent. Percentages are not shown if the denominator is fewer than 100 cases or the numerator is fewer than 5 cases. When a percentage or other statistic is not shown for this reason, an asterisk footnote (*) is inserted to signify that the statistic does not meet standards of reliability or precision. For most statistics presented in this report, the denominators are much larger than 100.

Although this report is primarily intended to provide basic descriptive statistics for key population subgroups that may guide future multivariate analyses, Table 5 shows multiple logistic regression (PROC SURVEYLOGISTIC) results for 12-month infertility, impaired fecundity, and a combined measure indicating either of these measures. Adjusted odds ratios (AORs) for these infertility measures among women aged 22–44 are shown, controlling for age, parity, marital or cohabiting status, education, percent of poverty level, and Hispanic origin and race. Table 5 shows 95% confidence intervals for each AOR, along with a *p* value indicating the statistical significance of the AOR.

Results

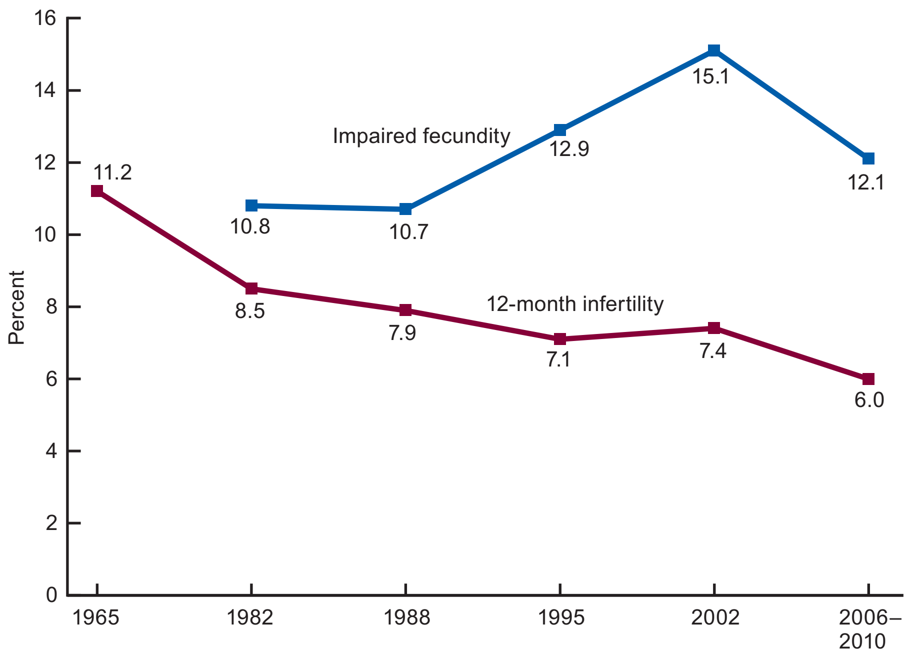
Trends in infertility and impaired fecundity

Table 1 shows the percent distribution, by fecundity and infertility status, for all women and for married women aged 15–44 in the United States for NSFG years 1982, 1988, 1995, 2002, and 2006–2010.

- Among all women aged 15–44, the percentage with impaired fecundity increased significantly, from 8.4% in 1982 and 1988 to 10% in 1995. After reaching 12% in 2002, the percentage remained stable at 11% in 2006–2010.
- Among married women aged 15–44, a similar pattern was seen for impaired fecundity, although with higher percentages through 2002: 11% of married women in 1982 and 1988 had impaired fecundity; the percentage rose to a high of 15% in 2002, and fell in 2006–2010 to 12%.
- The key subgroup of impaired fecundity that appears to drive the increase from 1982 to 2002 is the subfecund group—those for whom it is physically difficult or dangerous to have a baby. There was no significant change over time in the nonsurgically sterile or long interval without conception subgroups of impaired fecundity. In 1982, 6.7% of married women aged 15–44 were subfecund. After reaching a high of 11% subfecund in 2002 when impaired fecundity was at its highest point (15%), the percentage subfecund among married women was 10% in 2006–2010.
- A higher percentage of married women (or their husbands or partners) were surgically sterile for contraceptive reasons, compared with the levels seen among all women regardless of marital status. For example, in 2006–2010 35% of married women aged 15–44 were surgically sterile for contraceptive reasons, compared with 21% of women in that age group as a whole.

As a result of these higher levels of surgical sterilization and impaired fecundity among married women, a smaller proportion (roughly one-half) were in the residual category ''presumed fecund.''

Figure 1 and the bottom panel of Table 1 show that the percentage of married women who were infertile has



NOTES: Infertility is defined as lack of pregnancy in the 12 months prior to survey, despite unprotected intercourse with husband in each month. Impaired fecundity is defined as physical difficulties getting pregnant or carrying a pregnancy to live birth. Impaired fecundity was not defined in the 1965 National Fertility Study. See Methods for more details.
SOURCE: CDC/NCHS, National Survey of Family Growth, 1982–2010, and National Fertility Study, 1965 (Reference 3 and Table 1 in the present report).

Figure 1. Percentages with infertility and impaired fecundity among married women aged 15–44: United States, 1965–2010

Table. Numbers (in millions) of women aged 15–44 with infertility or impaired fecundity: United States, 1965 through 2006–2010

Status	1965	1982	1988	1995	2002	2006–2010
	Number in millions					
All women 15–44, impaired fecundity	- - -	4.56	4.85	6.16	7.26	6.71
0 births (primary impaired fecundity)	- - -	1.92	2.21	2.79	2.99	3.07
1 or more births (secondary impaired fecundity)	- - -	2.64	2.64	3.37	4.27	3.63
Married women 15–44 with impaired fecundity	- - -	3.06	3.13	3.84	4.28	3.10
0 births (primary impaired fecundity)	- - -	1.11	1.13	1.41	1.30	1.07
1 or more births (secondary impaired fecundity)	- - -	1.95	1.99	2.43	2.98	2.04
Married women 15–44 with infertilty	2.96	2.39	2.30	2.10	2.09	1.53
0 births (primary infertility)	0.51	1.00	1.02	0.97	0.85	0.70
1 or more births (secondary infertility)	2.48	1.39	1.27	1.12	1.24	0.83

- - - Data not available. The 1965 National Fertility Study was limited to married women and did not measure impaired fecundity.
NOTE: Total numbers in millions may differ from sum of numbers by parity, due to rounding.
SOURCE: CDC/NCHS, National Survey of Family Growth, 1982 to 2006–2010; National Fertility Study, 1965 (see Reference 3).

fallen from 11% in 1965 [based on the 1965 National Fertility Study (NFS)] to 8.5% in 1982 and 6.0% in 2006–2010 based on NSFG. (The 1965 NFS was conducted by Princeton University and is a predecessor survey to NSFG.) This is in contrast to the trend for impaired fecundity, particularly through 2002, as illustrated in Figure 1. In the most recent NSFG data, the prevalence of impaired fecundity among married women aged 15–44 has fallen to 12%, similar to the level seen in 1995.

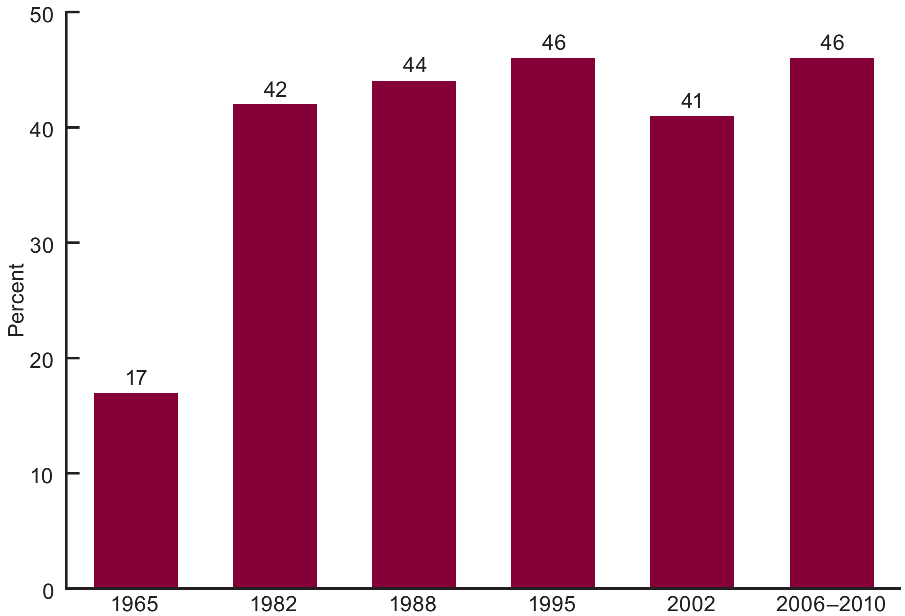
The table above provides the estimated numbers of women with infertility or impaired fecundity over this same period. The table also includes the estimated numbers of married, infertile women, based on the 1965 NFS. Even as percentages may remain relatively stable over this period, the absolute numbers may show more dramatic changes due to the larger size of the post-World War II Baby Boom cohorts, and this can give the impression of an increase in prevalence.

- Looking first at the most inclusive measure of impaired fecundity among all women aged 15–44, the absolute numbers increased by about 2.7 million women, from 4.56 million in 1982 to 7.26 million in 2002, then fell slightly to 6.71 million in 2006–2010.
- In all years from 1982 to 2006–2010, primary impaired fecundity among all women aged 15–44, or impaired fecundity among nulliparous women, represented slightly less than one-half of all women with impaired fecundity. When limited to married women, primary impaired fecundity represented closer to one-third of the total.
- Commensurate with the trend in percentages infertile seen in Table 1, the numbers of married women aged 15–44 with 12-month infertility decreased from nearly 3 million in 1965 to 1.5 million in 2006–2010. The proportion experiencing difficulties having their first child (primary infertility), among married infertile women, increased significantly, from 17% in 1965 to 41%–46% in 1982–2010 (Figure 2), which is consistent with patterns and trends in delayed childbearing over these years (10).

Fecundity status

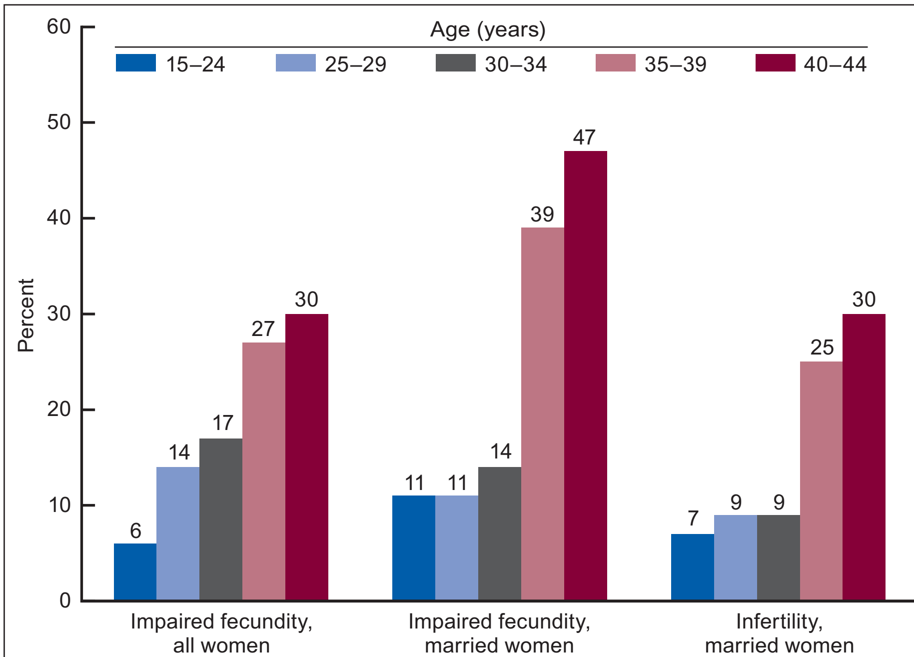
Table 2 shows the percent distribution of all women aged 15–44, by fecundity status and selected socioeconomic and demographic characteristics for 2006–2010.

- When looking at age among all women, regardless of parity, impaired fecundity was significantly associated with age, with 7.0% having impaired fecundity among women aged 15–24 and 13% among those aged 25–44. Among women aged 25–44, the strong association commonly expected with impaired fecundity was seen only when looking at nulliparous women, with 14% of nulliparous



NOTES: Infertility is defined as lack of pregnancy in the 12 months prior to survey, despite unprotected intercourse with husband in each month. Primary infertility refers to infertility among nulliparous women. See Methods for more details.
SOURCE: CDC/NCHS, National Survey of Family Growth, 1982–2010, and National Fertility Study, 1965 (Reference 3 and text table in the present report).

Figure 2. Percentage of married infertile women with primary infertility: United States, 1965–2010

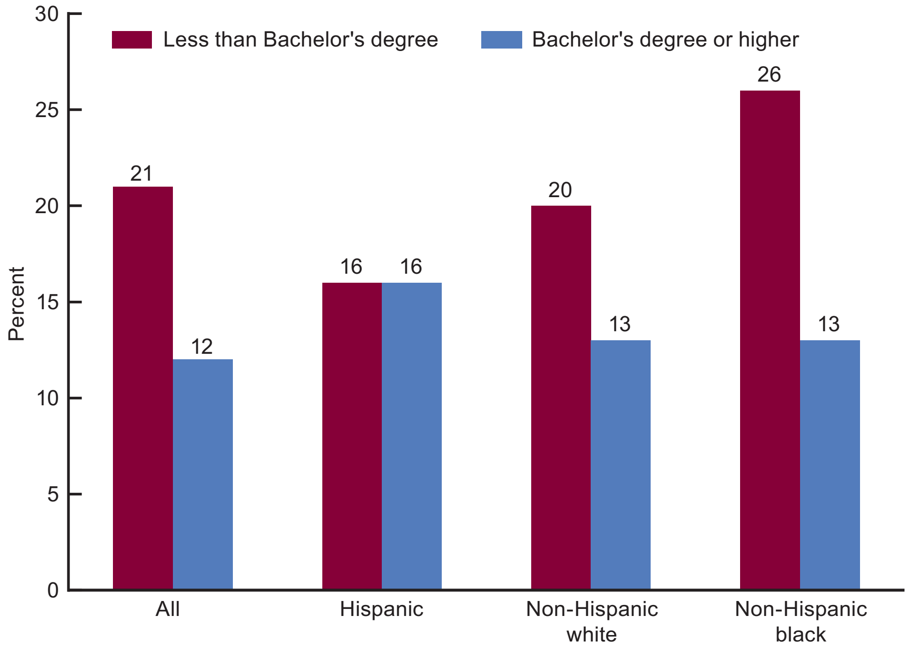


NOTE: Impaired fecundity is defined as physical difficulties getting pregnant or carrying a pregnancy to live birth. See Methods for more details.
SOURCE: CDC/NCHS, National Survey of Family Growth, 2006–2010. (Tables 2–4 in the present report.)

Figure 3. Impaired fecundity and infertility among nulliparous women, by age: United States, 2006–2010

women aged 25–29 having impaired fecundity, compared with 30% of those aged 40–44 (Figure 3).

- Higher levels of impaired fecundity were seen among currently married, currently cohabiting, and formerly married women, compared with never-married, not cohabiting women, who are on average younger than these other groups.
- No significant variation was seen in percentages with impaired fecundity by educational attainment among women aged 25–44; however, education is strongly tied to overall fecundity status by patterns of surgical sterilization and delayed childbearing. Women with less than a high school education were more likely to have undergone surgical sterilization for contraceptive reasons (44%) than women with a Bachelor's degree (21%) or a Master's degree or higher (16%). Similarly, women with these higher levels of education were more likely to still be fecund (65%–71%), compared with those with a high school education or less (42%–43%), presumably because these latter women started and completed their fertility at younger ages and opted for surgical sterilization (9,14).
- A similar pattern was seen for percent of poverty level, with no variation in the percentages with impaired fecundity but a significant association between poverty level and surgical sterilization.
- Among the Hispanic origin and race groups, roughly equal percentages of Hispanic, non-Hispanic white, and non-Hispanic black women had impaired fecundity (10%–12%); Asian women showed a lower percentage (6.7%).
- Although no variation in impaired fecundity was seen among the three main race and origin groups presented in Table 2, Figure 4 illustrates that a different pattern of primary impaired fecundity may exist by educational attainment and race and origin. Among nulliparous Hispanic women aged 22–44, no difference in levels of impaired fecundity was seen relative to



NOTE: Impaired fecundity is defined as physical difficulties getting pregnant or carrying a pregnancy to live birth. See Methods for more details.
SOURCE: CDC/NCHS, National Survey of Family Growth, 2006–2010.

Figure 4. Impaired fecundity among nulliparous women aged 22–44, by education and race and Hispanic origin: United States, 2006–2010

education. However, for nulliparous, non-Hispanic white and black women, those with a Bachelor's degree or higher were less likely to have impaired fecundity than those with less education.

Given the greater likelihood that married women would attempt childbearing or be in the position to test their fecundity, Table 3 shows the fecundity status of married women. Many of the same patterns noted in this table for married women were evident among all women aged 15–44 (Table 2).

- Impaired fecundity increased with age among nulliparous women, from 11% of those aged 15–24 and 25–29 to 47% of those aged 40–44.
- Although no significant association was seen between impaired fecundity and education, a strong inverse association was again evident between contraceptive surgical sterilization and education. The net effect of these patterns in surgical sterilization and impaired fecundity was that a higher percentage of women aged 25–44 with Bachelor's degrees (56%) or Master's degrees or higher (64%) were presumed fecund, compared with 35%–37% of women with a high school education or less.
- As seen among all women aged 15–44 in (Table 2), married Asian women were less likely to have impaired fecundity (8.4%) and less likely to be surgically sterile for contraceptive reasons (17%) relative to the three other race and Hispanic origin groups shown.

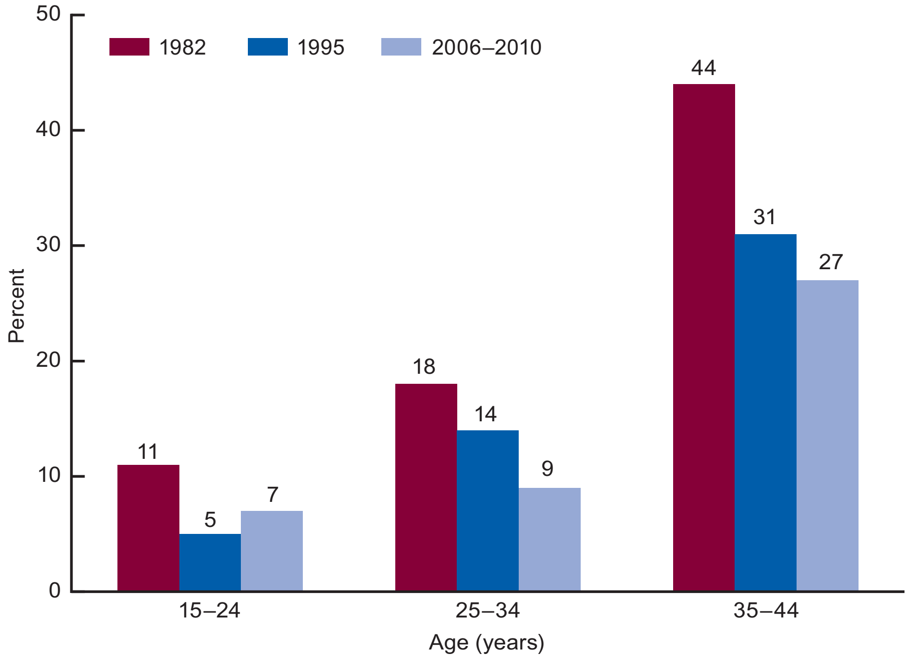
Infertility status

The percent distribution of married or cohabiting women aged 15–44, by infertility status, is shown in Table 4. Women are categorized as surgically sterile, infertile, or presumed fertile.

- Due to sample size constraints for cohabiting women, subgroup estimates of infertility can only be shown for married women. However, the 2006–2010 data show that about the same percentage of cohabiting women were infertile (4.9%) as compared with married women (6.0%).
- As seen for impaired fecundity, the close association between infertility and age is evident only among nulliparous women, that is, among those experiencing primary infertility. Among married nulliparous women, 25% of those aged 35–39 and 30% of those aged 40–44 were infertile, compared with 7.3%–9.1% of women aged 15–34.
- Figure 3 further illustrates the age pattern seen with impaired fecundity and infertility. When looking at impaired fecundity among all women regardless of marital status, a more gradual "stair-step" increase can be seen. In contrast, among married women, the levels of both impaired fecundity and infertility were similar for age groups under 35, with a significant increase in age-specific percentages seen for those aged 35–39 and 40–44.
- No clear association was seen between infertility and education or poverty-level income, but these factors were closely linked to the percentages surgically sterile.
- Figure 5 shows the difference in prevalence of infertility by age among married nulliparous women between 1982 and 2006–2010. Broader age groups were needed for this comparison because the numbers of married nulliparous women over age 30 in 1982 were too small to subdivide as was possible in 1995 and 2006–2010—again indicative of the greater delays in childbearing over this period. Among the youngest age group (ages 15–24), no significant change in percentages infertile was seen. However, among the older age groups, significantly lower levels of infertility were observed among married nulliparous women. For example, 44% of these women aged 35–44 in 1982 were infertile, compared with 27% in 2006–2010.

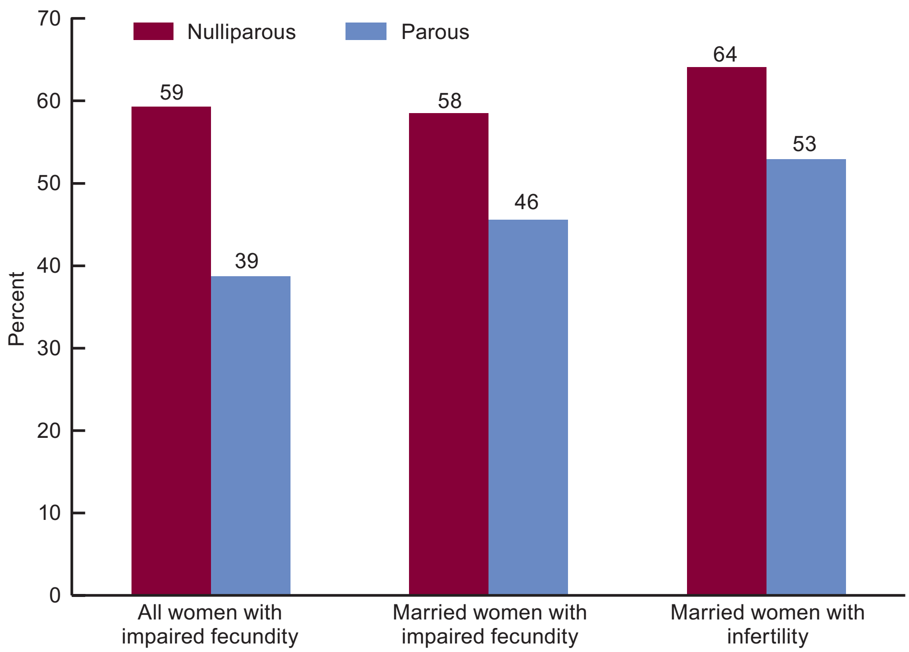
Fertility intentions among women with fertility problems

Figure 6 illustrates the correspondence of these NSFG measures with the intent to have another child. As noted in the "Methods" section, NSFG measures are intended to provide a snapshot of the



NOTE: Infertility is defined as lack of pregnancy in the 12 months prior to survey, despite unprotected intercourse with husband in each month. See Methods for more details.
SOURCE: CDC/NCHS, National Survey of Family Growth, 1982, 1995, and 2006–2010.

Figure 5. Infertility among married nulliparous women, by age: United States, 1982, 1995, and 2006–2010



NOTES: Infertility is defined as lack of pregnancy in the 12 months prior to survey, despite unprotected intercourse with husband in each month. Impaired fecundity is defined as physical difficulties getting pregnant or carrying a pregnancy to live birth. See Methods for more details.
SOURCE: CDC/NCHS, National Survey of Family Growth, 2006–2010.

Figure 6. Percentage of women aged 15–44 with infertility or impaired fecundity who intend to have a child (or another child), by parity: United States, 2006–2010

infertility and fecundity status of all women aged 15–44, regardless of their fertility intentions or their experience in trying to have a child. Some women who meet the definitions of impaired fecundity or 12-month infertility may never have wanted to have a child, or may no longer want to have a child, perhaps having already had a child with the aid of fertility treatment. The percentages who intended to have a child (or another child) at the time of interview, among women with fertility problems, may provide a more specific indicator of the potential demand for infertility services.

- Among all women with impaired fecundity, a higher percentage of women with primary impaired fecundity (59%) intended to have a child than those with secondary impaired fecundity (39%).
- The data for married women with infertility or impaired fecundity suggest a similar pattern by parity. For example, 64% of nulliparous married women with 12-month infertility intended to have a child, compared with 53% of parous, married, infertile women.
- Put another way, roughly 40% of women with primary fertility problems, and about 50%–60% of those with secondary fertility problems, did not intend to have a child (or another child) in the future.

Multivariate analysis of fertility problems

Table 5 presents multivariate logistic models showing the odds ratios for impaired fecundity, infertility, or either of these measures among women aged 22–44. This age group is chosen to provide a more reliable view of college education. These models adjust for the demographic characteristics included in Tables 2–4, to assess what characteristics may have the strongest net effect on the odds of these fertility problems.

- Using women aged 22–29 who have had a child as the reference group, nulliparous women were generally more likely to have infertility or impaired fecundity. Nulliparous women aged 35–44 were at least three times as likely as parous women aged 22–29 to have impaired fecundity. For infertility, a more pronounced association with age was seen among nulliparous women, with adjusted odds of infertility increasing from 2.38 for those aged 22–29 to nearly 13 for those aged 40–44.

- Never-married, noncohabiting women were less likely to have impaired fecundity than married women. In the model for 12-month infertility, which is defined only for married or cohabiting women, no difference was seen for cohabiting women compared with married women.
- In these adjusted models, neither education nor percent of poverty level income showed a net association with infertility or impaired fecundity.
- No difference by race and Hispanic origin was seen for impaired fecundity among all women aged 22–44. However, for infertility, non-Hispanic black women were about 1.8 times more likely to have infertility than either Hispanic or non-Hispanic women.

Male infertility status

Table 6 shows an infertility status measure from the male perspective. This measure reflects the man's own infertility status and, if he is married or cohabiting, the status of his wife or partner. Although similar to the female measures, these estimates are not intended as a direct comparison with the female-based estimates of infertility or fecundity status because of the differences in the level of detail collected in the male and female NSFG questionnaires. Also, it is expected that estimates of infertility for men in this age group would vary from estimates for women. Given the typical age differences between spouses or partners, the age distribution of wives or cohabiting partners of men aged 25–44, as shown in the table, would be somewhat younger than 25–44.

- Overall, there was no change in the infertility status of men aged 15–44 between 2002 and 2006–2010.
- For men aged 15–44, as for women, there was a close association between age and surgical sterility: 40% of men aged 40–44 (or their wives or partners) were surgically sterile, compared with 0.3% of men aged 15–24 and 3.4% of men aged 25–29.
- Thirty-one percent of men aged 25–44 who were currently married reported surgical sterilization, compared with 22% of those currently cohabiting, 13% of those formerly married, and 0.3% of never-married men.
- In contrast to what was seen among nulliparous women, the association between infertility and age for men who had no biological children was much weaker in this age range of 25–44. There was no association between men's subfertility and age among childless men; however, overall infertility did appear to be higher for those aged 40–44 (14%), compared with those aged 25–29 with no children (7.2%). This is consistent with evidence that men's physical ability to father a child declines with age (22,37), although less appreciably than women's fecundity prior to age 44.
- The data suggest that higher levels of surgical sterilization were seen among men with lower levels of education and household income, similar to the pattern for women. For example, 24% of men aged 25–44 with less than a high school education were surgically sterile or had wives or partners who were surgically sterile, compared with 15% of men with Master's degrees or higher.
- A higher percentage of non-Hispanic white men aged 25–44 reported surgical sterilization for themselves or their wives or partners (23%), compared with Hispanic men and non-Hispanic black men (each 17%) and Asian men (4%).

Conclusion

This report provides trends and national estimates for NSFG-based measures of infertility and impaired fecundity among women—and one measure of infertility status for men—in the United States, using the most recently available data from the 2006–2010 NSFG. In 2006–2010, 11% of all women aged 15–44, and 12% of married women in that age group, had impaired fecundity. When limited to older women aged 25–44, the prevalence of impaired fecundity does not change significantly, remaining at 12%–13%. The increase seen in impaired fecundity over the period 1982–2002 was driven by the subfecund category of impaired fecundity—women reporting that it was physical difficult or dangerous to carry a baby to term. However, the overall prevalence of impaired fecundity appears to have plateaued since 2002. Among men aged 25–44 in 2006–2010, 12% reported some type of infertility, either nonsurgical sterility or subfertility. Although this measure is not directly comparable with either measure of fertility problems in the female NSFG, the estimate is similar to the 12% of women aged 25–44 with impaired fecundity.

NSFG-based estimates of impaired fecundity and 12-month infertility presented in this report for the total population of women aged 15–44 fall within the range of estimates from other national demographic and health surveys; however, definitions and survey methodology vary markedly between the United States and other countries (38,39). One key difference is that other national estimates may be based on the denominator of couples seeking pregnancy, and others (including some using NSFG data) may be limited to individuals seeking pregnancy or those who intend a child (38–40). Given the significant societal trends in delayed marriage and childbearing over the past decades, estimates restricted to such subgroups may be higher than general population estimates due to the compositional changes in who is seeking pregnancy.

As seen with NSFG data, as well as National Survey of Fertility Barriers data (36), infertility or impaired fecundity is not synonymous with intentions to have a child. There is value in determining the population-based prevalence of fertility problems independent of fertility intentions, with the recognition that there are a wide range of responses to infertility that may not involve medical services. Also, fertility intentions may change over the course of time in response, for example, to changes in relationship status, socioeconomic status, and availability of infertility services, further highlighting the role of population-based, consistently measured indicators such as impaired fecundity and 12-month infertility. In recent years, there have been advancements in the measurement of infertility due to both earlier detection and an improved understanding of optimal times for medical intervention (5). Data from NSFG have been an integral part of this ongoing work to evaluate and improve the measurement techniques needed to estimate the prevalence and correlates of fertility problems in the United States.

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Table 1. Fecundity and infertility status of women aged 15–44: United States, 1982 through 2006–2010

Status	1982	1988	1995	2002	2006–2010
Numbers in thousands, all women 15–44	54,099	57,900	60,201	61,561	61,755
Numbers in thousands, married women 15–44	28,231	29,147	29,673	28,327	25,605
	Percent distribution (standard error)				
Fecundity status, all women 15–44	100.0	100.0	100.0	100.0	100.0
Surgically sterile, contraceptive	18.6 (0.8)	23.3 (0.6)	24.2 (0.5)	22.0 (0.7)	21.2 (0.8)
Surgically sterile, noncontraceptive	6.7 (0.4)	4.7 (0.3)	3.1 (0.2)	1.5 (0.2)	1.5 (0.2)
Impaired fecundity	8.4 (0.6)	8.4 (0.4)	10.2 (0.3)	11.8 (0.5)	10.9 (0.4)
Nonsurgically sterile	1.7 (0.3)	1.4 (0.2)	1.7 (0.1)	2.4 (0.2)	1.7 (0.2)
Subfecund	5.6 (0.4)	5.7 (0.3)	7.7 (0.3)	8.7 (0.4)	8.7 (0.4)
Long interval without conception[1]	1.2 (0.3)	1.3 (0.2)	0.9 (0.1)	0.8 (0.1)	0.5 (0.1)
Presumed fecund[2]	66.3 (0.9)	63.6 (0.7)	62.5 (0.6)	64.7 (0.8)	66.5 (0.9)
Fecundity status, married women 15–44	100.0	100.0	100.0	100.0	100.0
Surgically sterile, contraceptive	29.6 (1.2)	36.2 (0.9)	36.6 (0.7)	32.7 (1.4)	35.1 (1.3)
Surgically sterile, noncontraceptive	9.3 (0.8)	6.2 (0.4)	4.1 (0.3)	2.1 (0.3)	1.8 (0.3)
Impaired fecundity	10.8 (0.8)	10.7 (0.6)	12.9 (0.5)	15.1 (0.9)	12.1 (0.8)
Nonsurgically sterile	2.0 (0.4)	1.6 (0.3)	2.0 (0.2)	2.9 (0.4)	1.5 (0.2)
Subfecund	6.7 (0.6)	6.8 (0.4)	9.4 (0.5)	10.7 (0.7)	9.6 (0.7)
Long interval without conception[1]	2.1 (0.4)	2.3 (0.3)	1.6 (0.2)	1.5 (0.3)	1.0 (0.2)
Presumed fecund[2]	50.3 (1.3)	46.9 (0.9)	46.3 (0.8)	50.1 (1.5)	51.0 (1.3)
Infertility status, married women 15–44	100.0	100.0	100.0	100.0	100.0
Surgically sterile	38.9 (1.3)	42.4 (0.9)	41.0 (0.7)	34.8 (1.4)	36.9 (1.4)
Infertile[3]	8.5 (0.8)	7.9 (0.6)	7.1 (0.4)	7.4 (0.6)	6.0 (0.5)
Presumed fertile[2]	52.6 (1.3)	49.7 (0.9)	51.9 (0.7)	57.8 (1.4)	57.1 (1.4)

[1]Equivalent to at least 36 months of infertility. Specifically, it refers to married or cohabiting women who have been exposed to the risk of pregnancy with the same husband or partner for at least 36 consecutive months but have not had a pregnancy.

[2]Residual categories based on those who do not fulfill the definitions of the other categories shown.

[3]Married or cohabiting women are classified as infertile if they have been exposed to the risk of pregnancy with the same husband or partner for at least 12 consecutive months but have not had a pregnancy. Data shown are for married women.

NOTES: Fecundity and infertility status for married or cohabiting women reflects the status of their husbands or partners as well. Standard errors for 1982 and 1988 are based on approximate standard error tables published in Reference 13.

SOURCE: CDC/NCHS, National Survey of Family Growth, 1982, 1988, 1995, 2002, and 2006–2010.

Table 2. Fecundity status of all women aged 15–44, by selected characteristics: United States, 2006–2010

Characteristic	Number in thousands	Total	Surgically sterile: Contraceptive	Surgically sterile: Noncontraceptive	Impaired fecundity[1]	Presumed fecund[2]
		Percent distribution (standard error)				
All women 15–44[3]	61,755	100.0	21.2 (0.8)	1.5 (0.2)	10.9 (0.4)	66.5 (0.9)
Age						
15–24 years	20,842	100.0	0.9 (0.2)	*	7.0 (0.5)	92.0 (0.6)
25–44 years	40,912	100.0	31.6 (1.1)	2.2 (0.2)	12.8 (0.6)	53.4 (1.1)
25–29 years	10,535	100.0	12.8 (1.1)	0.3 (0.1)	12.6 (0.9)	74.3 (1.5)
30–34 years	9,188	100.0	25.1 (2.0)	1.6 (0.5)	12.2 (1.2)	61.1 (2.2)
35–39 years	10,538	100.0	38.3 (1.8)	1.8 (0.4)	13.9 (1.1)	46.0 (1.9)
40–44 years	10,652	100.0	49.1 (2.0)	4.9 (0.7)	12.5 (1.2)	33.5 (1.9)
Marital or cohabiting status						
Currently married	25,605	100.0	35.1 (1.3)	1.8 (0.3)	12.1 (0.8)	51.0 (1.3)
Currently cohabiting	6,910	100.0	18.8 (1.6)	1.7 (0.5)	12.8 (1.4)	66.7 (2.1)
Never married, not cohabiting	23,581	100.0	4.1 (0.4)	0.5 (0.2)	7.9 (0.6)	87.5 (0.8)
Formerly married, not cohabiting	5,659	100.0	33.2 (2.3)	3.1 (0.6)	15.0 (1.5)	48.7 (2.2)
Parity and age						
0 births	27,401	100.0	1.6 (0.2)	0.8 (0.2)	11.2 (0.7)	86.4 (0.8)
15–24 years	17,061	100.0	*	*	6.4 (0.6)	93.4 (0.6)
25–29 years	4,751	100.0	1.2 (0.5)	0.2 (0.1)	13.7 (1.8)	84.9 (1.9)
30–34 years	2,145	100.0	1.0 (0.6)	*	16.9 (2.8)	81.5 (2.8)
35–39 years	1,805	100.0	5.7 (1.2)	2.5 (1.1)	26.5 (3.2)	65.3 (3.4)
40–44 years	1,639	100.0	14.4 (3.3)	7.9 (2.4)	30.2 (4.2)	47.5 (4.3)
1 or more births	34,353	100.0	36.9 (1.0)	2.0 (0.3)	10.6 (0.6)	50.5 (1.0)
15–24 years	3,781	100.0	4.7 (1.0)	*	9.8 (1.4)	85.5 (1.7)
25–29 years	5,784	100.0	22.3 (1.7)	0.4 (0.2)	11.7 (1.2)	65.7 (1.9)
30–34 years	7,042	100.0	32.4 (2.4)	1.8 (0.6)	10.8 (1.2)	54.9 (2.2)
35–39 years	8,733	100.0	45.0 (2.0)	1.6 (0.5)	11.3 (1.2)	42.1 (2.0)
40–44 years	9,013	100.0	55.4 (2.2)	4.4 (0.8)	9.3 (1.1)	31.0 (2.0)
Education[4]						
No high school diploma or GED	6,054	100.0	44.3 (2.6)	2.3 (0.7)	12.0 (1.4)	41.5 (2.3)
High school diploma or GED	9,999	100.0	41.8 (1.8)	3.3 (0.6)	12.2 (1.2)	42.7 (1.7)
Some college, no bachelor's degree	11,424	100.0	29.9 (1.5)	2.2 (0.5)	14.3 (1.1)	53.6 (1.6)
Bachelor's degree	9,455	100.0	21.2 (1.7)	1.5 (0.5)	12.2 (1.2)	65.1 (1.8)
Master's degree or higher	3,980	100.0	16.0 (2.2)	0.5 (0.2)	12.9 (2.1)	70.5 (2.4)
Percent of poverty level[5]						
0–99	10,554	100.0	29.0 (1.7)	1.8 (0.4)	12.6 (1.2)	56.6 (2.1)
100–299	21,133	100.0	27.8 (1.2)	1.7 (0.3)	11.5 (0.7)	59.0 (1.2)
300–399	9,311	100.0	29.2 (1.9)	1.8 (0.6)	10.3 (1.2)	58.8 (1.9)
400 or more	10,279	100.0	14.1 (1.5)	1.8 (0.5)	14.1 (1.3)	70.0 (1.8)
Hispanic origin and race						
Hispanic or Latina	10,474	100.0	21.7 (1.6)	1.1 (0.3)	9.7 (0.6)	67.5 (1.7)
Not Hispanic or Latina:						
White, single race	37,384	100.0	22.2 (1.1)	1.6 (0.2)	11.1 (0.6)	65.1 (1.2)
Black or African American, single race	8,451	100.0	19.9 (1.5)	1.5 (0.3)	11.6 (0.8)	67.0 (1.6)
Asian, single race	2,456	100.0	10.3 (2.5)	–	6.7 (1.6)	83.0 (2.9)

* Figure does not meet standards of reliability or precision; based on fewer than five cases in numerator.
– Quantity zero.
[1]Consists of nonsurgically sterile, subfecund, and long interval without conception, as shown separately in Table 1.
[2]A residual category based on those who do not fulfill the definitions of the other categories shown.
[3]Includes women of other or multiple race and origin groups, not shown separately.
[4]Limited to women aged 25–44 at time of interview. GED is General Educational Development high school equivalency diploma.
[5]Limited to women aged 20–44 at time of interview.

NOTES: Percentages may not add to 100 due to rounding. Fecundity status for married or cohabiting women reflects the status of their current husbands or partners as well.

SOURCE: CDC/NCHS, National Survey of Family Growth, 2006–2010.

Table 3. Fecundity status of married women aged 15–44, by selected characteristics: United States, 2006–2010

Characteristic	Number in thousands	Total	Surgically sterile: Contraceptive	Surgically sterile: Noncontraceptive	Impaired fecundity[1]	Presumed fecund[2]
		Percent distribution (standard error)				
All married women 15–44[3]	25,605	100.0	35.1 (1.3)	1.8 (0.3)	12.1 (0.8)	51.0 (1.3)
Age						
15–24 years	1,935	100.0	2.8 (1.1)	*	9.0 (2.0)	87.7 (2.1)
25–44 years	23,670	100.0	37.7 (1.3)	2.0 (0.3)	12.4 (0.8)	48.0 (1.3)
25–29 years	4,679	100.0	15.6 (1.8)	*	10.3 (1.5)	73.9 (2.0)
30–34 years	5,446	100.0	28.4 (2.7)	2.0 (0.8)	12.8 (1.6)	56.7 (2.7)
35–39 years	6,808	100.0	43.2 (2.4)	1.0 (0.5)	14.1 (1.3)	41.8 (2.4)
40–44 years	6,736	100.0	55.0 (2.4)	4.2 (0.9)	11.8 (1.4)	29.1 (2.4)
Parity and age						
0 births	5,032	100.0	5.4 (1.1)	1.3 (0.7)	21.2 (2.0)	72.1 (2.3)
15–24 years	951	100.0	–	*	11.0 (3.7)	87.9 (3.8)
25–29 years	1,651	100.0	3.3 (1.5)	–	11.1 (2.3)	85.6 (2.6)
30–34 years	936	100.0	*	–	14.2 (3.3)	84.6 (3.4)
35–39 years	739	100.0	7.6 (2.4)	*	39.3 (6.6)	52.5 (7.1)
40–44 years	754	100.0	19.9 (5.4)	7.1 (4.0)	47.1 (7.2)	25.9 (5.7)
1 or more births	20,573	100.0	42.3 (1.4)	2.0 (0.4)	9.9 (0.8)	45.8 (1.4)
15–24 years	984	100.0	5.5 (2.0)	–	7.0 (2.0)	87.5 (2.4)
25–29 years	3,028	100.0	22.3 (2.4)	*	9.9 (1.8)	67.6 (2.7)
30–34 years	4,510	100.0	34.1 (3.1)	2.5 (0.9)	12.5 (1.7)	51.0 (2.8)
35–39 years	6,068	100.0	47.6 (2.7)	1.0 (0.5)	11.0 (1.2)	40.5 (2.6)
40–44 years	5,982	100.0	59.4 (2.6)	3.8 (0.9)	7.4 (1.1)	29.5 (2.5)
Education[4]						
No high school diploma or GED	2,837	100.0	52.0 (3.7)	1.5 (0.7)	11.3 (1.8)	35.3 (3.1)
High school diploma or GED	5,351	100.0	49.0 (2.3)	3.3 (0.9)	10.5 (1.4)	37.2 (2.4)
Some college, no bachelor's degree	6,248	100.0	37.3 (2.0)	2.5 (0.8)	12.1 (1.4)	48.1 (2.2)
Bachelor's degree	6,507	100.0	29.6 (2.3)	1.1 (0.6)	13.8 (1.7)	55.5 (2.3)
Master's degree or higher	2,727	100.0	21.0 (3.0)	0.7 (0.3)	14.4 (2.7)	63.9 (3.3)
Percent of poverty level[5]						
0–99	3,029	100.0	37.9 (2.7)	1.6 (0.6)	10.1 (1.6)	50.4 (2.8)
100–299	10,378	100.0	40.7 (1.9)	1.4 (0.5)	11.2 (1.1)	46.7 (1.9)
300–399	6,246	100.0	38.6 (2.7)	2.3 (0.8)	10.8 (1.4)	48.3 (2.4)
400 or more	5,835	100.0	20.6 (2.3)	2.4 (0.8)	16.4 (1.9)	60.7 (2.5)
Hispanic origin and race						
Hispanic or Latina	4,199	100.0	35.8 (2.9)	1.0 (0.4)	10.6 (1.5)	52.6 (2.3)
Not Hispanic or Latina:						
White, single race	17,235	100.0	36.4 (1.8)	2.0 (0.5)	12.5 (1.0)	49.1 (1.7)
Black or African American, single race	2,033	100.0	36.2 (3.3)	2.9 (1.1)	11.3 (1.7)	49.5 (3.4)
Asian, single race	1,292	100.0	17.0 (4.3)	–	8.4 (2.3)	74.6 (4.8)

* Figure does not meet standards of reliability or precision; based on fewer than five cases in numerator.
– Quantity zero.
[1]Consists of nonsurgically sterile, subfecund, and long interval without conception, as shown separately in Table 1.
[2]A residual category based on those who do not fulfill the definitions of the other categories shown.
[3]Includes women of other or multiple race and origin groups, not shown separately.
[4]Limited to women aged 25–44 at time of interview. GED is General Educational Development high school equivalency diploma.
[5]Limited to women aged 20–44 at time of interview.

NOTES: Percentages may not add to 100 due to rounding. Fecundity status for married women reflects the status of their husbands as well.

SOURCE: CDC/NCHS, National Survey of Family Growth, 2006–2010.

Table 4. Infertility status of married or cohabiting women aged 15–44, by selected characteristics: United States, 2006–2010

Characteristic	Number in thousands	Total	Surgically sterile	Infertile[1]	Presumed fertile[2]
		Percent distribution (standard error)			
All married or cohabiting women 15–44[3]	32,515	100.0	33.4 (1.1)	5.8 (0.4)	60.8 (1.1)
Marital or cohabiting status					
Married	25,605	100.0	36.9 (1.4)	6.0 (0.5)	57.1 (1.4)
Cohabiting	6,910	100.0	20.5 (1.7)	4.9 (0.9)	74.6 (1.9)
All married women 15–44[3]					
Age:					
15–24 years	1,935	100.0	3.3 (1.2)	3.7 (1.7)	92.9 (2.0)
25–44 years	23,670	100.0	39.7 (1.4)	6.2 (0.6)	54.2 (1.4)
25–29 years	4,679	100.0	15.8 (1.8)	5.6 (1.1)	78.7 (1.9)
30–34 years	5,446	100.0	30.5 (2.7)	4.6 (0.7)	65.0 (2.6)
35–39 years	6,808	100.0	44.2 (2.4)	7.8 (1.0)	48.0 (2.4)
40–44 years	6,736	100.0	59.1 (2.6)	6.2 (0.9)	34.7 (2.6)
Parity and age:					
0 births	5,032	100.0	6.8 (1.3)	14.0 (1.6)	79.2 (1.9)
15–24 years	951	100.0	*	7.3 (3.5)	91.7 (3.6)
25–29 years	1,651	100.0	3.3 (1.5)	8.7 (2.5)	88.0 (2.8)
30–34 years	936	100.0	*	9.1 (2.1)	89.6 (2.3)
35–39 years	739	100.0	8.2 (2.4)	24.7 (5.3)	67.2 (5.8)
40–44 years	754	100.0	27.0 (6.5)	29.6 (6.1)	43.4 (7.3)
1 or more births	20,573	100.0	44.3 (1.4)	4.0 (0.5)	51.7 (1.5)
15–24 years	984	100.0	5.5 (2.0)	*	94.1 (2.0)
25–29 years	3,028	100.0	22.6 (2.4)	3.9 (1.1)	73.6 (2.6)
30–34 years	4,510	100.0	36.5 (2.9)	3.6 (0.8)	59.8 (2.9)
35–39 years	6,068	100.0	48.6 (2.7)	5.8 (0.9)	45.7 (2.6)
40–44 years	5,982	100.0	63.2 (2.7)	3.2 (0.7)	33.6 (2.7)
Education:[4]					
No high school diploma or GED	2,837	100.0	53.4 (3.6)	5.7 (1.4)	40.9 (3.4)
High school diploma or GED	5,351	100.0	52.3 (2.5)	6.4 (1.2)	41.4 (2.4)
Some college, no bachelor's degree	6,248	100.0	39.8 (1.9)	4.5 (0.8)	55.7 (2.2)
Bachelor's degree	6,507	100.0	30.7 (2.4)	7.9 (1.1)	61.4 (2.6)
Master's degree or higher	2,727	100.0	21.7 (3.0)	6.0 (1.8)	72.2 (3.3)
Percent of poverty level:[5]					
0–99	3,029	100.0	39.5 (2.6)	4.8 (1.2)	55.7 (2.8)
100–299	10,378	100.0	42.0 (2.0)	5.4 (0.7)	52.6 (2.0)
300–399	6,246	100.0	40.9 (2.6)	5.2 (1.0)	53.9 (2.5)
400 or more	5,835	100.0	23.0 (2.5)	8.7 (1.2)	68.3 (2.5)
Hispanic origin and race:					
Hispanic or Latina	4,199	100.0	36.8 (2.8)	6.1 (1.2)	57.1 (2.6)
Not Hispanic or Latina:					
White, single race	17,235	100.0	38.4 (1.8)	5.5 (0.6)	56.1 (1.8)
Black or African American, single race	2,033	100.0	39.1 (3.5)	7.2 (1.6)	53.7 (3.4)
Asian, single race	1,292	100.0	17.0 (4.3)	5.6 (1.7)	77.4 (4.8)

* Figure does not meet standards of reliability or precision; based on fewer than five cases in numerator.
[1]Married or cohabiting women are classified as infertile if they have been exposed to the risk of pregnancy with the same husband or partner for at least 12 consecutive months, but have not had a pregnancy.
[2]A residual category based on those who do not fulfill the definitions of the other categories shown.
[3]Includes women of other or multiple race and origin groups, not shown separately.
[4]Limited to women aged 25–44 at time of interview. GED is General Educational Development high school equivalency diploma.
[5]Limited to women aged 20–44 at time of interview.

NOTES: Percentages may not add to 100 due to rounding. Infertility status for married women reflects the status of their husbands as well.

SOURCE: CDC/NCHS, National Survey of Family Growth, 2006–2010.

Table 5. Adjusted odds ratios for selected measures of fertility problems among women aged 22–44: United States, 2006–2010

Characteristic	Impaired fecundity[1]	12-month infertility[2]	Either impaired fecundity or 12-month infertility
	Adjusted odds ratio (95% confidence interval)		
Parity and age			
0 births/22–29 years	1.31 (0.92–1.86)	2.38 (1.21–4.65)**	1.35 (0.97–1.88)^
0 births/30–34 years	1.86 (1.16–2.99)	3.18 (1.59–6.35)**	1.88 (1.20–2.94)*
0 births/35–39 years	3.13 (2.00–4.89)***	10.09 (4.86–20.98)***	3.16 (2.13–4.69)***
0 births/40–44 years	3.48 (2.26–5.36)***	12.61 (6.19–25.71)***	3.92 (2.58–5.96)***
1 or more births/22–29 years (reference)	1.0	1.0	1.0
1 or more births/30–34 years	0.91 (0.67–1.23)	1.09 (0.58–2.05)	0.89 (0.67–1.19)
1 or more births/35–39 years	0.97 (0.70–1.35)	1.65 (0.95–2.89)^	0.94 (0.69–1.28)
1 or more births/40–44 years	0.77 (0.56–1.05)	0.64 (0.38–1.08)^	0.72 (0.54–0.97)*
Marital or cohabiting status			
Currently married (reference)	1.0	1.0	1.0
Currently cohabiting	0.98 (0.74–1.31)	0.86 (0.55–1.35)	1.08 (0.83–1.42)
Formerly married, not cohabiting	1.21 (0.92–1.58)	. . .	1.06 (0.81–1.39)
Never married, not cohabiting	0.68 (0.51–0.91)**	. . .	
Education[3]			
No high school diploma or GED	1.07 (0.75–1.53)	1.18 (0.59–2.39)	1.06 (0.76–1.48)
High school diploma or GED	1.19 (0.88–1.61)	1.34 (0.82–2.20)	1.20 (0.90–1.61)
Some college, no bachelor's degree	1.24 (0.94–1.63)	0.76 (0.47–1.22)	1.20 (0.93–1.56)
Bachelor's degree or higher (reference)	1.0	1.0	1.0
Percent of poverty level			
0–99	1.20 (0.87–1.66)	1.33 (0.70–2.55)	1.20 (0.89–1.63)
100–299	1.01 (0.76–1.33)	1.17 (0.75–1.83)	0.97 (0.74–1.28)
300–399	0.85 (0.61–1.18)	1.09 (0.66–1.80)	0.86 (0.63–1.19)
400 or higher (reference)	1.0	1.0	1.0
Hispanic origin and race[4]			
Hispanic or Latina	0.87 (0.69–1.10)	1.43 (0.90–2.28)	0.85 (0.67–1.08)
Non-Hispanic white, single race (reference)	1.0	1.0	1.0
Non-Hispanic black, single race	1.10 (0.87–1.40)	1.84 (1.10–3.06)*	1.16 (0.92–1.46)

^ $p < 0.10$.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.
. . . Category not applicable.
[1]Consists of nonsurgically sterile, subfecund, and long interval without conception, as shown separately in Table 1.
[2]Defined only for married or cohabiting women and indicates they have been exposed to the risk of pregnancy with the same husband or partner for at least 12 consecutive months but have not had a pregnancy.
[3]GED is General Educational Development high school equivalency diploma.
[4]Women of other race and origin groups or multiple race groups are not included in the logistic regression models due to small sample size.
SOURCE: CDC/NCHS, National Survey of Family Growth, 2006–2010.

Table 6. Infertilty status among men aged 15–44 and 25–44, by selected characteristics: United States, 2002 and 2006–2010

Characteristic	Number in thousands	Total	Surgically sterile[1]	Some type of infertility[1] Subtotal	Nonsurgically sterile	Subfertile	Presumed fertile[2]
		Percent distribution (standard error)					
2002, All men 15–44[3]	60,984	100.0	15.1 (1.0)	11.1 (0.6)	5.6 (0.5)	5.5 (0.5)	73.8 (1.0)
2006–2010, All men 15–44[3]	62,128	100.0	13.9 (0.7)	9.4 (0.5)	4.2 (0.3)	5.2 (0.4)	76.7 (0.8)
Age:							
15–24 years	21,210	100.0	0.3 (0.1)	5.4 (0.6)	2.1 (0.3)	3.3 (0.5)	94.3 (0.6)
25–29 years	10,758	100.0	3.4 (0.5)	8.9 (1.0)	4.4 (0.7)	4.4 (0.7)	87.8 (1.1)
30–34 years	9,228	100.0	14.3 (1.4)	11.8 (1.1)	5.0 (0.8)	6.8 (1.0)	73.9 (1.7)
35–39 years	10,405	100.0	26.0 (1.9)	13.2 (1.4)	5.5 (0.9)	7.7 (1.1)	60.8 (2.0)
40–44 years	10,526	100.0	39.7 (2.6)	12.2 (1.3)	6.1 (1.0)	6.1 (1.0)	48.1 (2.4)
2006–2010, All men 25–44[3]	40,917	100.0	20.9 (1.0)	11.5 (0.6)	5.2 (0.4)	6.2 (0.5)	67.6 (1.1)
Marital or cohabiting status:							
Currently married	22,119	100.0	31.0 (1.6)	15.8 (1.0)	6.8 (0.7)	9.0 (0.8)	53.2 (1.6)
Currently cohabiting	5,746	100.0	22.1 (2.2)	11.3 (1.5)	6.2 (1.3)	5.1 (1.0)	66.5 (2.2)
Never married, not cohabiting	9,898	100.0	0.3 (0.1)	3.8 (0.6)	2.1 (0.4)	1.7 (0.4)	95.8 (0.6)
Formerly married, not cohabiting	3,154	100.0	12.5 (2.3)	5.6 (1.4)	2.4 (1.1)	3.2 (1.1)	81.9 (2.7)
Number of biological children and father's age:							
0 biological children	14,967	100.0	5.1 (0.7)	10.5 (1.0)	5.1 (0.8)	5.4 (0.6)	84.4 (1.2)
25–29 years	6,199	100.0	1.5 (0.5)	7.2 (1.4)	4.0 (1.1)	3.2 (0.8)	91.3 (1.4)
30–34 years	3,547	100.0	5.0 (1.6)	13.0 (2.0)	5.8 (1.6)	7.2 (1.6)	82.0 (2.3)
35–39 years	2,736	100.0	7.8 (2.0)	11.7 (2.1)	4.6 (1.2)	7.1 (1.9)	80.5 (2.5)
40–44 years	2,484	100.0	11.2 (2.3)	14.0 (2.5)	7.2 (1.7)	6.7 (2.2)	74.9 (3.3)
1 or more biological children	25,950	100.0	30.1 (1.4)	12.0 (0.7)	5.3 (0.6)	6.7 (0.6)	57.9 (1.3)
25–29 years	4,559	100.0	6.0 (1.1)	10.9 (1.6)	4.9 (1.3)	6.0 (1.2)	83.1 (1.7)
30–34 years	5,680	100.0	20.1 (2.2)	11.1 (1.5)	4.5 (1.0)	6.6 (1.0)	68.8 (2.2)
35–39 years	7,669	100.0	32.4 (2.4)	13.7 (1.6)	5.8 (1.1)	7.9 (1.3)	53.8 (2.3)
40–44 years	8,042	100.0	48.4 (3.0)	11.7 (1.5)	5.7 (1.2)	6.0 (1.1)	39.9 (2.7)
Education:[4]							
No high school diploma or GED	7,847	100.0	23.9 (2.0)	13.7 (1.4)	8.2 (1.2)	5.5 (0.9)	62.4 (2.1)
High school diploma or GED	10,617	100.0	24.2 (1.9)	10.5 (1.2)	5.8 (0.9)	4.7 (0.7)	65.4 (1.7)
Some college, no bachelor's degree	10,650	100.0	20.8 (1.7)	11.3 (1.2)	3.7 (0.6)	7.7 (1.1)	67.9 (1.9)
Bachelor's degree	7,983	100.0	16.6 (1.6)	10.6 (1.5)	3.9 (0.9)	6.7 (1.2)	72.8 (2.1)
Master's degree or higher	3,820	100.0	15.2 (2.7)	12.0 (1.9)	5.0 (1.7)	7.0 (1.7)	72.8 (3.1)
Percent of poverty level:							
0–99	5,337	100.0	20.7 (2.5)	13.1 (1.6)	7.3 (1.2)	5.7 (0.9)	66.3 (2.8)
100–299	15,462	100.0	21.9 (1.4)	10.8 (0.9)	5.8 (0.7)	5.0 (0.7)	67.3 (1.4)
300–399	8,552	100.0	29.3 (2.2)	8.4 (1.1)	3.1 (0.9)	5.3 (0.9)	62.4 (2.3)
400 or more	11,566	100.0	13.6 (1.4)	13.9 (1.4)	5.2 (0.8)	8.8 (1.2)	72.4 (1.8)
Hispanic origin and race:							
Hispanic or Latino	8,016	100.0	16.7 (1.3)	12.8 (1.3)	7.6 (1.0)	5.2 (0.8)	70.6 (1.7)
Not Hispanic or Latino:							
White, single race	24,580	100.0	23.1 (1.4)	11.1 (0.8)	4.2 (0.5)	6.9 (0.7)	65.8 (1.4)
Black or African American, single race	4,418	100.0	16.6 (2.2)	13.2 (1.6)	6.4 (1.1)	6.8 (1.2)	70.2 (2.5)
Asian, single race	1,658	100.0	3.5 (1.4)	12.8 (2.8)	8.4 (2.5)	4.3 (1.7)	83.7 (3.0)

[1]For currently married or cohabiting men, these categories may reflect the status of their wives or cohabiting partners as well.
[2]A residual category based on those who do not fulfill the definitions of the other categories shown.
[3]Includes men of other or multiple race and origin groups, not shown separately.
[4]GED is General Educational Development high school equivalency diploma.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: CDC/NCHS, National Survey of Family Growth, 2002 and 2006–2010.

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